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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/718,312	11/22/2000	Walter F. Rausch	1437	3505

7590 06/09/2003

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EXAMINER

NGUYEN, DUC M

ART UNIT PAPER NUMBER

2685

DATE MAILED: 06/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/718,312	Applicant(s) Rausch et al
Examiner Duc Nguyen	Art Unit 2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-68 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2
- 4) Interview Summary (PTO-413) Paper No(s). _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

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DETAILED ACTION

Information Disclosure Statement

1. The references listed in the information disclosure statements submitted on 11/15/02 has been considered by the examiner (see attached PTO-1449).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 63 is rejected under 35 U.S.C. 102(b) as being anticipated by **Appel et al** (GB Pub. Number 2347319).

Regarding claim 63, **Appel** discloses a wireless communication which receives and converts a communication signal to an optical signal for transmitting over a fiber optical cable which would include all the claimed limitations (see **Figs. 10, 13, and col. 14, lines 14-19**).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-62, 64-68 are rejected under 35 U.S.C. 103(a) as being unpatentable by **Appel** in view of **Ariyavitsakul** (US Pat No. 5,046,066) and **Bickley et al** (US Pat No. 5,982,322).

Regarding claims 1, 7, 11, 14, 35, 41, 45, 57, 67-68, the claims are rejected for the same reason as set forth in claim 63 above. However, **Appel** fails to disclose a stabilizing system and a converting system. However, since **Appel** discloses a frequency synthesizer and GPS receiver which provides accurate clock and frequency signal to the main controller (see col. 15, lines 4-26), and although **Appel** is silent on the frequency conversion, it would have been obvious to one skill in the art to modify **Appel** to down convert to a lower frequency before modulating electrical signals to optical signals as suggested by **Ariyavitsakul** (see Fig. 4 and col. 5, line 56 - col. 6, line 30), for allowing greater flexibility in allocating bandwidth over the optical link and the wireless link. Further, since **Appel** discloses a GPS receiver, it is clear that the frequency synthesizer in **Appel's** teaching would obviously comprise a stable oscillator which is calibrated by the stable timing signal from GPS receiver as disclosed by **Bickley** (see col. 8, lines 1-19), for synchronization purpose. Therefore, it would have been obvious to one skill in the art to combine teachings of **Appel**, **Ariyavitsakul** and **Bickley** to provide a stabilizing system and a converting system as claimed, for synchronizing oscillator with GPS timing signal to account for drift rates

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(Bickley's teaching), and for frequency down conversion frequency before modulating electrical signals to optical signals to allow greater flexibility in allocating bandwidth over the optical link and the wireless link (Ariyavasitakul's teaching), wherein it is clear that the stabilizing system would comprise a stabilized local oscillator and the converting system would comprise a block converter as claimed.

Regarding claims **2-6, 8-10, 12-13, 17-18, 22, 24-25, 29-31, 34, 36-39, 42-43, 48-51, 55-56, 58-62, 64-65**, the claimed are interpreted and rejected for the same reason as set forth in claim 1 above.

Regarding claims **15-16, 23, 29, 32, 2-6, 8-10, 12-13, 17-18, 22, 24-25, 29-31, 40, 44, 46-47, 66**, the claimed are rejected for the same reason as set forth in claim 1 above. In addition, since such features (i.e., amplifier, filter or frequency range) as recited in the claims are well known in the art, it would have been obvious to one skill in the art to further modify Appel, Ariyavasitakul and Bickley to incorporate such features into the system, for improving signal quality and system performance of the communication system.

Regarding claims **26-28, 52-54**, the claims are rejected for the same reason as set forth in claim 1 above. In addition, since Appel discloses an upper and lower portion of a tower (see Fig. 10), it would have been obvious that the GPS receiver for generating a stable timing signal can be located at the upper or at the lower portion of a tower for which the selected portion would receive better signals from GPS satellites.

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Regarding claims 33-34, the claims are rejected for the same reason as set forth in claim 1 above. In addition, since the use of redundant components in a communication system is well known in the art for backup failure components, it would have been obvious to one skill in the art to modify **Appel, Ariyavasitakul** and **Bickley** to comprise such redundant components as recited in the claim, for providing a back up system to minimize disruptions of the communication system.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- **Talbot** (US Patent Number 6,163,294), Time-tagging electronic distance measurement instrument measurements to serve as legal evidence of calibration.

- **Maloney et al** (US Patent Number 6,047,192), Robust, efficient, localization system.

- **Graves et al** (US Patent Number 6,198,558), Architecture re-partitioning to simplify outside-plant component of fiber-based access system.

- **Schalomon** (DE Pub Number 3707244), Method for digital transmission of radio signals.

7. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

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(703) 872-9314 (for formal communications intended for entry)

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist).

Any inquiry concerning this communication or communications from the examiner should be directed to Duc M. Nguyen whose telephone number is (703) 306-4531, Monday-Thursday (9:00 AM - 5:00 PM). Or to Edward Urban (Supervisor) whose telephone number is (703) 305-4385.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Duc M. Nguyen



May 28, 2003